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In the Claims:

1 –23.(Cancelled)

24.(Currently amended)   A system for predicting likely liver toxicity as a side effect of application of a pharmaceutical substance, the system comprising:

an input device for obtaining blood levels of ALT and AST respectively,

a comparator, associated with said input device for comparing said respective levels of ALT (alanine aminotranferase) and AST (aspartate aminotransferase) to produce a ratio of said levels,

a predictor associated both with said input device and said comparator, and including a model, for predicting, from application of said levels and said ratio therebetween to said model, a likelihood of development of liver toxicity, said predictor set to conclude from low ALT and AST levels and a ratio close to 1, that a likelihood of development of liver toxicity is low, and

A system according to claim 20, further comprising a thresholder for setting a threshold likelihood, above which application of said pharmaceutical substance is to be discontinued.

25.(Cancelled)   .

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26.(Currently amended)   <u>A method for modeling an interaction between at least one biological system and at least one pharmaceutical substance, the method comprising:</u>

<u>building a state diagram of states of said interaction,</u>

<u>entering at least one of inputs to said states and interactions relationships between said states,</u>

<u>defining at least one output from at least one of said states,</u>

<u>obtaining empirical data regarding said interaction,</u>

randomly dividing said empirical data ~~set~~ into at least two data sets,

<u>carrying out data mining on one set of said empirical data to assign at least one of values to said relationships and functions to said states, thereby to obtain a quantitative model of said interaction</u>~~A method according to claim 25, comprising:~~

~~performing said data mining using only one of said sets,~~ <u>and</u>

testing said model using a remaining one of said sets to ensure that said data has not been overfitted.

<u>27.(cancelled)</u>